

Montana Board of Oil and Gas Conservation Environmental Assessment

Operator: G3 Operating LLC

Well Name/Number: Lien 4

Location: NE SW Section 1 T22N R59E

County: Richland, MT; Field (or Wildcat) Mondak, West

Air Quality

(possible concerns)

Long drilling time: No, 20-25 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick drilling rig to drill a directional Madison Formation development well in the Mondak West Oil Field to a depth of 9,418.9' MD/9,287' TVD.

Possible H₂S gas production: Yes, slight H₂S possible.

In/near Class I air quality area: No Class I air quality area nearby.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☒ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Drill a Madison Formation directional well to depth of 9,418.9' MD/9,287' TVD. If no gas gathering system exists nearby sweet gas and/or H₂S gas can be flared under Board Rule 36.22.1220. No concerns.

Water Quality

(possible concerns)

Salt/oil based mud: Yes to oil based invert drilling fluids main hole. Surface casing hole will be drilled with freshwater and freshwater mud system to be used.

High water table: Possible high water table anticipated.

Surface drainage leads to live water: Yes, the closest drainages are Benny Peer Creek, next to the location southwest and southeast and the Yellowstone River is about 1/8 of a mile to the northwest from this location.

Water well contamination: No, closest water wells are about 3/8 of a mile to the west, about 1/2 of a mile to the southeast, about 5/8 of a mile to the northwest, about 3/4 of a mile to the northeast, about 3/4 of a mile to the west northwest, about 3/4 of a mile to the southwest from this location. The depth of these water wells range from 42' to 1410'. This well will be drilled with freshwater and freshwater mud to 1,721' and steel surface casing will be run and cemented to surface to protect groundwater.

Porous/permeable soils: Yes, sandy silty soils.

Class I stream drainage: Yes, Class I stream drainage, Yellowstone River.

Mitigation:

☒ Lined cuttings pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☒ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☒ Other: Closed Loop drilling mud system with cuttings pit.

Comments: 1,721' surface casing will be drilled with freshwater, steel casing will be run to 1,721' and cemented back to surface. To protect freshwater zones in adjacent water wells and covering the Fox Hills aquifer. Adequate surface casing and operational BOP equipment should prevent any problems.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None anticipated, will utilize existing county roads.

High erosion potential: No, location will require a small cut of up to 2.2' and small fill of up to 0.8', required.

Loss of soil productivity: No, location to be restored after drilling, if nonproductive. If productive, unused portion of this drillsite will be reclaimed.

Unusually large wellsite: No, very large well site 399'X305' dual well location for the Lien #4 and Lien #5.

Damage to improvements: Slight surface use appears to be pasture sagebrush/grassland.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☒ Other Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28).

Comments: Access will be over county road, #122. New access road will be built into this location, about 169' off the existing county road into this location. Oil based invert drilling fluids will be recycled. Completion fluids will hauled to a commercial Class II disposal. Cuttings and solids will be buried/solidified(fly-ashed) on site in the lined cuttings pit. The pit will be allowed to dry and the pit backfilled. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Residences about, 3/8 of a mile to the west and about 3/8 of a mile to the northeast from this location.

Possibility of H2S: Yes, possible H2S.

Size of rig/length of drilling time: Triple drilling rig 20 to 25 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Piping Plover, Interior Lease Tern and the Whooping Crane. Candidate species are the Sprague's Pipit and the Greater Sage Grouse. NH tracker website indicates nine (9) species of concern: the Townsend Big-eared Bat, Black-tailed Prairie Dog, Hoary Bat, Meadow Jumping Mouse, Evening Grosbeak, Whooping Crane, Red-headed Woodpecker, Least Tern and Spiny Softshell. NH Tracker

website lists four (4) potential species of concern: Chimney Swift, Eastern Screech Owl, Tennessee Warbler and Plumbeous Vireo.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: Private surface pasture grassland. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: Private surface pasture grassland. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: Development well. No concerns

Remarks or Special Concerns for this site

Plan to directionally drill a development well in the Mondak West Oil field to the Madison Formation at a depth of 9,418.9'MD/9,287'TVD.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected, some short term impacts will occur, but can be mitigated.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki

(title:) Chief Field Inspector

Date: April 20, 2012

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)

Richland County water wells

(subject discussed)

April 20, 2012

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA
COUNTIES, Richland County, Montana

(subject discussed)

April 20, 2012

Montana Natural Heritage Program Website

(Name and Agency)

Heritage State Rank= S1, S2, S3, T22N R59E

(subject discussed)

April 20, 2012

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____